US DEPARTMENT OF AGRICULTURE
FOREST SERVICE

5240

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Report No. S-69-32 October, 1969

RESULTS OF SARATOGA SPITTLEBUG CONTROL WITH MALATHION LV[1/] ON THE HURON NATIONAL FOREST - 1969

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INTRODUCTION

A Saratoga spittlebug, Aphrophora saratogensis (Fitch), outbreak on plantation red pine was found by scar count surveys on 1179 acres on all 3 Districts in the fall of 1968 (Millers, 1968). Another 4017 acres were added to the outbreak area as the result of supplemental surveys. Based on nymphal surveys the summer of 1969, 4810 acres were treated in 51 units (49 units on Harrisville Ranger District and one each on Mio and East Tawas Ranger Districts). A unit is a plantation or small group of adjacent plantations. Malathion LVC (95% technical) insecticide was applied at the rate of 10 fl. oz. per acre by a fixed-wing aircraft during the last week of July and the first week of August, 1969.

METHODS

The effectiveness of the control was determined by comparing the pre- and post- spray spittlebug populations in 13 randomly selected units (Table 1). The following formula was used to calculate percentage of control:

$$\text{Percentage Control} = \frac{A-B}{A} \times 100$$

where,

A = number of adult spittlebugs before spraying
B = number of adult spittlebugs after spraying

1/ Registered trademark by American Cyanamid Corp. for 95% tech. malathion. No endorsement of the trade name is intended.

Previous experience indicates that natural mortality is negligeable during the short period between the pre- and post- treatment sweep surveys. The adult spittlebug counts were made by sweeping and counting the insects on 25 trees per plantation during the pre-spray survey and double that number of trees during the post-spray survey. The number of adults counted in the pre-spray survey was doubled in the calculations to adjust for the smaller sample. The survey lines were run diagonally across the plantations.

RESULTS

The average control was 88.6% with a range from 82.7% to 100% (Table 1). One of the post-spray sweepers observed that most of the surviving adult spittlebugs were on pines under an overstory of hardwoods (mostly oaks).

Table 1--Results of Sweep Surveys in Selected Plantations Treated with Malathion LVC (All plantations on Harrisville Ranger District)

Unit	T	R	S	Adult per sweep Pre-Spray x 2	Post-Spray	Control %
2	26	8	9	60	2	96.7
3	26	8	9	70	6	91.4
8	26	8	8	144	19	86.8
13	26	8	6	94	7	92.6
18	27	8	32	90	12	86.7
20	27	7	36	194	28	85.6
23	26	7	21,22	74	11	85.1
28	26	7	8	58	10	82.7
29	26	6	13	42	7	83.3
45	27	4	33,34	28	0	100.0
46	25	5	5	34	0	100.0
47	26	5	19	8	0	100.0
49	25	4	18	10	1	90.0
					Average	88.6

Millers, I. 1968. Biological evaluation of Saratoga spittlebug as based on 1968 scar count surveys on National Forests in the Lake States. USDA Forest Service, NA S&PF, St. Paul Field Office Report S-68-13. 18 pp.